

# B I O S

Alberta Society of Professional Biologists • Fall 2011

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## A Message From Your President

*By Charles Macmichael, P.Biol.*

I begin with many thanks for the opportunity to serve this organization and its members. I am humbled by the many talented people I have met through my involvement with the ASPB the last 4 years. The members, the board, the volunteers and the staff have all enriched my experience and taught me a lot. I began working with the ASPB as a volunteer on the conference committee and then as a co-chair of the conferences. From that position I got to know many of the board members and gain exposure to their work and the work of others within the ASPB. This exposure piqued my interest in the organization and its governance, from which point I became involved as the President Elect to Laurie Hamilton and now the President. Laurie, and those who have served as president before her, have put in many hours and have done great work to get the organization through many challenges in its growth and development. I certainly have big shoes to fill in this regard. I am proud to be a part of a board and staff that care about the organization, are willing to make tough decisions and put in the time to do what is required to keep the ASPB going through its continued development, to serve its members, and increase its standing within Alberta.

This summer has been an active one for the board and staff of the ASPB, as well as the committees of dedicated volunteers. Highlights of these activities include:

- Mentorship program assessment and continued development of the program structure
- Continuing Competency Program review process development
- Continued membership applications review and processing
- Strategic plan development for 2011/12
- Developing relationships with other professional organizations and academic organizations within Alberta and British Columbia
- Guidelines for use of logo and continued development of ASPB management processes
- Continued development of the role of the Executive Director
- Passing the 1000 members mark
- Communications committee development of new outreach products
- Discipline committee guidelines development

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ASPB Executive and Board of Directors from left to right: Top row: Susan Patey LeDrew (President -Elect), Charles Macmichael (President), Markus Thormann, Gerry Hackel, Darrell Jobson, Gary Ash (Treasurer)  
Bottom Row: Laurie Hamilton (Past President), Tara Caseley, David McInnes (Public member), Kashif Sheikh.  
Not in photo: Glenda Fratton (Secretary), Henri de Pennart.

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BIOS is published for the enjoyment and benefit of the members of the Alberta Society of Professional Biologists and those interested in the field of professional biology. Articles or comments are welcomed and should be sent to the editor, Linda Zimmerling at lindazim@shaw.ca.

## Executive Director's Report



P. Ross Bradford, ASPB Executive Director

This past and first year has been one full of learning the ropes which tie this organization together. I have learned about the purpose and history, and am now ready to take on the challenges of the future of the regulated professions in Alberta and Canada. I believe that now I have a pretty good handle on the issues and am more prepared to make a significant contribution to the ASPB as its Executive Director.

The opportunity to attend Biology Career Day at the U of A was significant. Also the Environmental Science Students' Association invited me to attend their career night. What surprised me was how uninformed those students were about the opportunities in professional biology and

how they knew little about the requirements to qualify for a PBiol designation. They were enthusiastic and welcoming. It was also interesting to note the participation of other organizations offering the student a non-professional and non-regulated choice.

An ASPB volunteer committee is taking up the challenge to provide students with the information they require in order to make the choices in their education that will open these opportunities to them. Our scholarship programs with the major Alberta universities provide the other continuing ties.

Much of these past summer months have been dedicated to engaging other external communities in building essential relationships so critical to the mission and vision of the ASPB. Promoting awareness of the ASPB to the outside community is essential, especially as the demands on the profession continue to evolve.

Introductions and meetings with our universities, colleges, and partners such as the zoo, Nature Centres, museums and conservatories provided the opportunity to learn of their needs and describe the role and programs of the ASPB.

Interactions with, and the study of the other regulated professions have provided useful insight into the future development of the ASPB strategic plan. In many ways these organizations are in competition with each other and the ASPB's responsibility for stewardship of the profession must be recognized.

Recognizing change within the community and listening to the community's needs this summer included awareness of the proposed government actions at both the Federal and Provincial levels as The Report of the Alberta Environmental Monitoring Panel was released. Will there be increased need for the skills of the professional biologist? And how does the ASPB fill this need?

Several of our committees have been very busy this summer creating a new mentoring program and revitalizing our web page. These activities are timely in meeting the needs of the members in our community.





## A Message From Your President

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Looking forward, the board with assistance from the volunteers and staff, will be working towards the following initiatives along with their regular meetings and business:

- Fiscal responsibility and examination of membership fees
- Building more internal capacity and development of the Executive Director role
- Increased support for Mentorship program and phased approach to developing a more supported system of implementation
- Membership benefits program expansion
- Planning for successful 2012 conference and AGM
- Communications and guidance for students and academic institutions for membership applications
- Strategic plan implementation
- Continued promotion of the organization and professional sign-off requirements

I look forward to working alongside the other board members, staff and volunteers during my term, and hope that more members choose to get involved in the organization and its committees. Together, we strive to develop and promote the benefits of being a member of a professionally recognized and regulated group.

If you have any questions or comments, please send them to [pbio1@aspb.ab.ca](mailto:pbio1@aspb.ab.ca).

## ASPB at the ACTWS

*By Kashif M. Sheikh, P.Biol. and Aynsley Shirriff, B.I.T.*

In March, Aynsley Shirriff and Kashif Sheikh represented the ASPB at the Alberta Chapter of The Wildlife Society (ACTWS) Conference in Camrose. The ASPB maintained a booth at the conference where we displayed brochures, pictures and information about the ASPB's objectives and role in promoting excellence in the practice of biology. Interacting with professional colleagues within the ACTWS and meeting young professionals and students enabled us to answer questions and raise awareness about the ASPB's regulatory functions for biologists in Alberta.

It was an interesting conference with incredible keynote speakers such as Michael Sullivan and Brian Keating. Michael Sullivan spoke about the Last Goldeye: the Past and Future of North Saskatchewan Watershed; and Brian Keating offered a quick journey through various conservation and wildlife projects in the African savannah, Himalayas and Alberta. Apart from ASPB official representation at the conference, Kashif Sheikh gave a talk on the topic of "Community-based Biodiversity Monitoring at Industrial Sites in Western Canada: Prospects and Challenges".

The conference was attended by Government, regulatory agencies, and a few members from consulting and NGOs. There were student and faculty participants from NAIT, UofA-Augustana, UofC, Lethbridge College and Lakeland College. We had stimulating discussions with various people from SRD Fish & Wildlife, Alberta Environment and the Alberta Conservation Association; namely, Ron Bjorge and Margo Pybus of SRD, Courtney Hughes of Alberta Environment, and Tammy MacMillan of ACA. Many appreciated the ASPB presence.

Brad Stelfox received the ACTWS Rowan Award this year. The Rowan Award is the most prestigious award offered by the ACTWS. Each year, the ACTWS selects a seasoned Alberta wildlife biologist who is recognized for his or her outstanding cumulative contributions to wildlife management and conservation. We extend our congratulations to Dr Stelfox.

The participants at the ACTWS conference were apprised of the functions and benefits of ASPB membership and the networking potentials that come along with it. Some biologists inquired about the membership renewal process. A few others asked about the Annual General Meeting (AGM) and other programs. UofA and NAIT students showed interest in becoming student members and inquired about the process of membership.

Dave Scobie (outgoing president of ACTWS) and James Allen (incoming President) reaffirmed their commitments to the ASPB and, in turn, the ACTWS displayed a booth at the ASPB conference held in April. Overall, the ASPB's presence at the ACTWS conference was welcomed. It is nice to feel everyone's commitment to the wildlife, conservation and biodiversity community in Alberta.

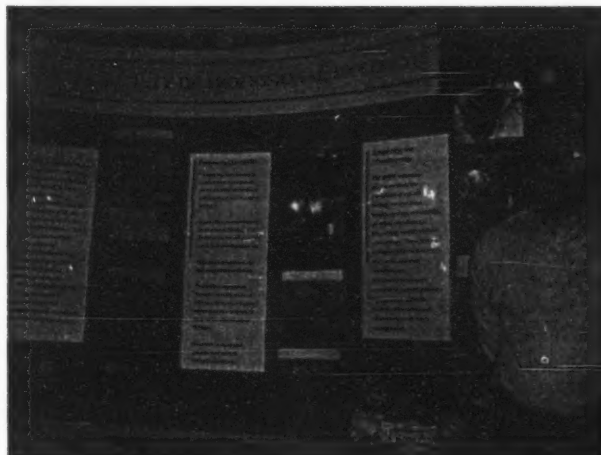


Photo Credit: Iman Kashif

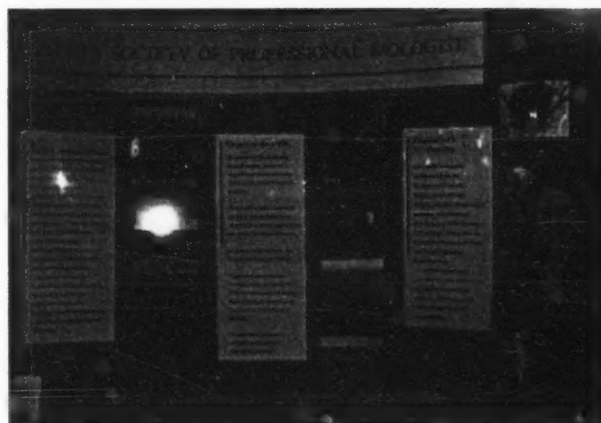


Photo Credit: Kashif Sheikh, P.Biol.

## Interview with a Biologist: Doug Chadwick

By Ngaio Hotte, P.Biol.

*Usually in this column we bring you stories of Professional Biologists from across Alberta. Instead, we are bringing something a little different: we will explore the story of Doug Chadwick, a Montana-based biologist and author. Let us know what you think!*



Photo Credit: Rick Yates

What began as a winter vacation for Doug Chadwick and his wife, Karen, has turned into an eight-year campaign to raise awareness about wolverines, culminating in the release of his recent book, *The Wolverine Way*. Of course, Doug's idea of a vacation is not what many would consider typical.

Doug was six when he used his first microscope, a gift from his geologist father, to examine a droplet of water. He was astonished to find the droplet was teeming with life and other wonders. Before long he was a "child geek scientist", conducting experiments with fruit flies in the family's basement. He grew up in field camps during the summers, working alongside his father as he traveled around North America every summer; from the border of Alaska, right down to Mexico. While his father investigated rocks, Doug spent most of his time gazing at birds and mammals.

He went on to complete his undergraduate degree at the University of Washington and graduate studies at the University of Montana, studying the ecology and social behaviour of mountain goats at the edge of the Bob Marshall Wilderness in the Swan Mountains.

After graduating, Doug was hired as a wildlife technician by Glacier National Park to study the Park's official symbol, the mountain goat. Mountain goats outside the Park were being hunted intensively at the time, and the herds' numbers were falling rapidly in the Rocky Mountain region. Management agencies in both the U.S. and Canada needed better information to develop an understanding of the species and to create a recovery plan. "Everyone assumed they were a lot like cervids and other resilient hunted species, but they are totally different. In fact, their closest relatives in North America are muskoxen," Doug explains. "They're slow to mature; slow to reproduce."

But progress toward the herds' recovery was slow, and Doug grew frustrated. "New roads for logging and development were going in everywhere. The species I knew and loved was in steep decline," he recalls. "So I began to make the transition from conservation work to that of being an activist." Fortunately, the story of the mountain goat in much of the Rockies has a happy ending: the species has recovered from an overexploited population of perilously low numbers to healthier herds in many areas.

Doug's next career move was a shift into journalism. "Writing has always come naturally, and I enjoyed being a bridge between scientists and the public, so I became a journalist," he says, although Doug admits that a degree of good fortune was involved in his transition.

It happened in the 1970s, while Doug was lobbying for conservation of the Flathead Valley: he was approached by a representative from National Geographic Society Magazine and asked to write a story for an issue of the magazine that would focus on wild and scenic rivers. His involvement marked a turning point for Doug; he has since written approximately fifty stories for National Geographic. *The Wolverine Way* is his eleventh published book.

Doug's involvement in wolverine research, like so many of his projects, was spontaneous and unplanned. He heard from a colleague about a research team led by principal investigator Jeff Copeland that was looking for volunteers with experience in the backcountry to help track and trap the animals. "I just wanted to learn more about wolverines," Doug says. "I knew that there was little known about them. As soon as the researchers started pointing out some of the walls they were scaling, and how they were moving through the mountains, and the size of their range, I knew I was in. It was simple research, as long as you could work in the conditions."

Wolverines were extirpated from the lower 48 states in 1920, and the reduction of predator poisoning campaigns in Canada and the U.S. helped to reintroduce the animals in the 1960s and 1970s. But the return of the wolverines attracted hunters and trappers and increasing development in Montana's high country was permitted without consideration of the potential impacts on the population. "Wolverines are a symbol of changing environments in the top of the world and landscape connectivity," he explains. "They have small litters every other year, starting at age three. If you remove a couple of females a year, the population starts sliding downhill. Now, there are only about 40 to 50 wolverines in Glacier National Park and possibly fewer than 300 in the lower 48 states because they were not a high profile animal and little was known about them."

The more Doug learned, the more he was drawn into the world of wolverines: "They are nothing like people imagine."

Contrary to their reputation as solitary, vicious creatures, Doug and the researchers discovered that wolverines are often animated and caring toward their young. "They're investigative, playful, and exploratory," he describes.

They also discovered that wolverines have ranges far larger than expected: "There is a female in the North Cascades that has a 760 square mile territory, extending up into Canada. That takes up about half of North Cascades National Park. It's hard to imagine how anybody can cover that kind of ground; not even in a year, but regularly. One radio-collared wolverine climbed to the summit of the tallest peak in Glacier Park, Mount Cleveland, in January, and this thing looks like an Olympic ski jump - only steeper. He climbed the last 5,000 nearly-vertical feet in 90 minutes. And then he carried on to British Columbia and Waterton National Park, then back into Glacier. And he did it in a week."

Starting in 2003, Doug and Karen helped the researchers to collect six years' worth of radio-tracking data. Their winter "vacation" took on a life of its own, paving the way to production of a PBS special on wolverines, "Chasing the Phantom", and laying the foundation for a book. Through an existing business relationship with the outdoor clothing manufacturer Patagonia, Doug was offered funding for the publication.

While writing the book, Doug allowed himself to stray from hard science and focused more on the exciting adventures from his earlier days working on the project. "If wildlife books aren't fun, no one but other wildlife people will read them," he says. "When I write books, I'm always looking over my shoulder at my scientist colleagues and keeping an eye on scientific data. But these animals are fun, and I'm having a ball trying to track them. Everything we find out about them is jaw-dropping."

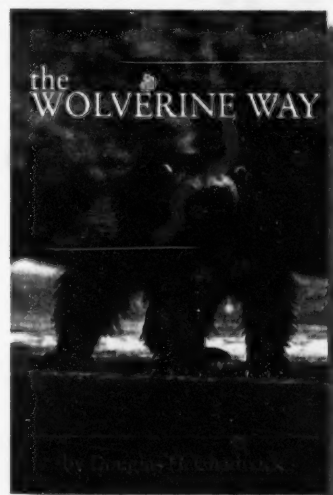
Having been an "honest scientist" before he moved to "the dark side and the media", Doug wonders if wildlife scientists need to re-evaluate their role as experts. "If we are serious about this being the Great Age of Extinction and Climate Change, the Age of Seven Billion People and counting fast, as scientists, can we afford to sit back, publish our data, and wait for it to spread?" Doug asks. "The information is technical and is not accessible to the public. If you're modeling population dynamics, you can't expect that other people will jump on board and help that population thrive. There needs to be more of a bridge with the public. Scientists need to communicate this information. And who better? They are the people doing the original work." He appreciates how difficult this is for scientists to do, but notes: "If journalists say it, it is easier to dismiss than if a professional says it."

So what does Doug see as the emerging role for wildlife scientists in conservation? "Scientists need to find a new way to dance along the line of science versus advocacy. I'm reading too much bad science from journalists. I hope that one day, I will live in an environment where speaking out for conservation based on science is encouraged," he says.

Doug compares the responsibility of wildlife scientists to that of doctors, as experts in their respective fields: "Doctors are supposed to speak for good health: they sit the patient down and explain in the best terms possible what needs to be done."

Though Doug has moved on to other investigative projects, he continues to do whatever he can to attract attention to Montana's wolverine population and the challenges it is facing. He and Karen are still involved in field work for the project, embarking on four-day treks several times a year to collect hair samples at bait posts. When prodded about what will be his next big project, Doug is excited but uncertain; his projects are always a surprise, especially to him. The evolution of his exciting career has been equal parts luck, talent, being at the right place at the right time, and a willingness to explore new possibilities. "If you are engaged in a conservation challenge, jump in and see where it leads you. This is not a call to become a rabid activist," Doug cautions. "But I don't think we should work so hard to separate the logical, rational, professional parts of us from our hearts. If you feel strongly about something, you should pursue it and worry about what to do with it later."

While he may appear to be pulled in a million different directions by his work, Doug sees a common theme emerging: "Nature lies in the process and the connections as much as it lives in the individual animals. The messages from the large mammals about connectivity are the same as the messages from the microbes: The power of nature lies in the connections between species. And I want to know more about how it works. I'm really lucky that my job is to find out more all the time."



Look for Angela Perry's book review of *The Wolverine Way* in the next edition of BIOS.

## Book Review 'The Algal Bowl'

By Angela Perry, P.Biol.

In 1974 John R. Vallentyne wrote *The Algal Bowl: Lakes and Man*. This book predicted that by the year 2000 we would be living in an Algal Bowl, analogous to the Dust Bowl of the 1930s. Just as the dust bowl was caused by mismanagement of our land, the Algal Bowl is a result of mismanagement of land and water resources. This book was key in affecting change in policy, helping shape political decisions, resulting in a decrease in urban phosphates. Witnessing acceleration in eutrophication of our water bodies, Vallentyne then invited David W. Schindler to co-author an updated version resulting in *The Algal Bowl: Overfertilization of the World's Freshwaters and Estuaries*.

The original predictions from 1974 have proven true and Schindler and Vallentyne use several different case studies to examine both successes and failures in both stopping and reversing eutrophication. It is good to see local examples, such as Lac La Biche, presented in the book.

I found this book very interesting especially in light of this year's exceptional rainfall events. Local lakes are experiencing heavier than average algal blooms owing to nutrient overloading. Once the ground was saturated, there was enough water to cause runoff from areas that don't normally reach our water bodies. The book also offered a perspective of causes and issues that are relevant to Albertans – increasing intensity of agriculture and livestock as the world's demand for food also increases. Waste by farm animals exceeds human production by a ratio of 30:1 in Alberta. The daily phosphorous output from one cow is equivalent to that of 11 humans.

The book examined causes of eutrophication but also offered solutions and hope: "We know most of what we must do to prevent eutrophication and to recover culturally eutrophied lakes. What is often missing is the courage of policy makers to apply the measures that we know well" (p. 37). Overall, this was a very culturally relevant and fascinating book.



## ASPB Conference Success

By Alison Beal, B.I.T.

### 2011 ASPB Conference Recap

The 2011 ASPB Conference "The Role of the Biologist in Industrial Development" was held at the Calgary Zoo on April 13 and 14, 2011. Planning for the conference began in November 2010. The conference committee was composed of a dedicated and diverse group of ASPB members. The ASPB Conference committee was privileged to have a number of speakers from industry, government, environmental consulting, academia, and non-government organizations give presentations on a wide range of topics. Creating the program involved a call for papers, with all submissions included as a presentation and some set up as a discussion panel. The presentations were divided into seven sessions:

- Session 1 – Environmental and Risk Management
- Session 2a – Stakeholder Engagement
- Session 2b – Wind Energy Development
- Session 3 – Investigating the Roles & Perspectives of a Biologist \*Discussion Panel\*
- Session 4 – Wildlife Interactions
- Session 5 – Reclamation: Hot Topics
- Session 6 – Wetland Assessments \*Discussion Forum\*
- Session 7 – Effective Team Participation & Policy Development

Attendees were treated to a variety of presentations ranging from high level discussions to those focusing on specific studies and/or practical applications. Discussion forums allowed for a variety of perspectives to be presented. It was refreshing to focus on the diversity of roles of a biologist and acknowledge that biologists are working in other areas, not just environmental consulting.



Panel from left to right: C. Gates, University of Calgary; C. Nugent, ASRD; S. Grindal, P.Biol., ConocoPhillips Canada; M. Jalkotzy, Golder Associates Ltd.; C. Bradley, P.Biol., Alberta Native Plant Council. Photo Credit: Laurie Hamilton, P.Biol.

Conference attendees were also treated to a presidential address by Laurie Hamilton, P. Biol., to kick off the conference and closing remarks by incoming ASPB President, Charles Macmichael, P. Biol. The ASPB Annual General Meeting was held on the first day of the conference and was well attended by members. The dinner banquet followed with comedian Leland Klassen.

The conference was well attended and successful, receiving positive feedback through discussions after the presentations and from the conference feedback forms. Conference attendees included delegates, presenters, sponsors, and committee volunteers coming from environmental consulting (64%), industry (17%), government

(11%) and other (8%). The ASPB received very positive feedback for the sessions in terms of the relevance of topics and quality of the presentations. The choice of venue also scored highly. Overall, the conference achieved the goal of keeping members informed about the role of the biologist whether in industry, government, environmental consulting, academia, or non-government organizations. It also provided opportunities to network, and help ASPB members fulfill their professional development requirements.

## Biography of Hilary C. Young, BSc, MA



Hilary Young was the ASPB Student Presentation Award winner at the ASPB 2011 Conference held at the Calgary Zoo, 13-14 April 2011. The title of her presentation was "Moose (*Alces alces*) Distribution at Clearcut-Forest Edges in the Rocky Mountain Foothills".

A love of the outdoors was instilled in Hilary at a young age. She grew up in Ontario, where she spent summers exploring the forests, ponds and lakes around her family's cottage near

Peterborough. Her interest in wildlife eventually led her to pursue an Honours degree in Animal Biology at the University of British Columbia (2001). In her fourth year, under the supervision of Dr Judy Myers, she camped on a small island in Queen Charlotte Sound for twelve weeks, collecting data on the insect biodiversity of three different habitat types.

Following graduation, she travelled to Borneo to conduct a study on social learning in juvenile orangutans (*Pongo pygmaeus*) at the BOS Wanariset orangutan rehabilitation centre. Her experience with insects and primates fused nicely in her Masters research with Dr Linda Fedigan at the University of Calgary. In Costa Rica at the Research Centre in Santa Rosa National Park, she examined selective insect foraging in white-faced capuchin monkeys (*Cebus capucinus*), focusing specifically on how the monkeys foraged on ant-defended acacia trees (*Acacia collinsii*). Her MA was awarded in 2005.

She decided to change tack again for her PhD, and has returned to conducting research in the temperate biome. Hilary's current work, supervised by Dr Mary Reid at the University of Calgary, is on the movement behaviour of ungulates at habitat edges on the Eastern slopes of the Canadian Rocky Mountains. Despite the apparent diversity in her research interests, in each case Hilary was simply interested in the pattern of and process behind a specific biological or ecological system. Lately, she is also driven by wanting to understand how humans can minimize their impact on existing natural systems. Hilary is currently on the Board of Directors of the Friends of Kananaskis Country, and looks forward to completing her PhD in 2012.

Hilary has 4 publications, 3 in refereed journals, 1 non-refereed, and 9 presentations at conferences. Hilary has been awarded 9 scholarships and 7 awards and grants during her graduate studies.

And sometime in the near future, she will be applying to be a B.I.T. with the ASPB.

## Can grizzly bears persist on a landscape shared with mining?

By Bogdan Cristescu and Mark S. Boyce

The grizzly bear is an iconic species for the wilderness of the Alberta Rocky Mountains and Foothills. But how adaptable are bears to expanding industrial activities in Alberta?

One of the main resource extraction industries occurring in the Alberta Rocky Mountains and Foothills is open-pit coal mining. Coal is a major underground resource and in 2008 burning of thermal coal provided 59% of the total energy for the province.

On the other hand, metallurgical coal is almost exclusively being exported. Alberta contains 70% of Canada's coal reserves and coal-bearing formations cover 48% of the province's land area, some of which overlaps grizzly bear habitat. In 1999, the Foothills Research Institute Grizzly Bear Program led by Gordon B. Stenhouse set off to assess the effects of mining on grizzly bears. Subsequently a partnership was established with the University of Alberta to facilitate collection and analyses of data on grizzly bear movements, habitat selection and foraging on and around reclaimed and active open-pit mines, using Luscar, Gregg River and Cheviot mines in west-central Alberta as study areas. Data collection occurred in 1999-2003 and 2008-2010 allowing ongoing comparative analyses of grizzly bear response to mining at different stages.

Grizzly bears not only move onto reclaimed mine sites at certain times of the year, but they also engage in foraging and resting in these human-modified areas. An analysis carried out for 2008-2010 showed substantial variation in home range sizes of adult bears captured and radiocollared near Cadomin, 50 km south of Hinton. Eight of the ten bears monitored with GPS radio-collars during this period had home ranges that overlapped mine leases, with the average overlap on reclaimed mine leases being ~10%. One female bear with cubs had almost 50% of her home range on reclaimed mines.

Seasonally, the greatest home range overlap with reclaimed mines occurs in late spring and early summer, when bears graze on legumes sown as part of mine reclamation. At this time of the year, when using areas undisturbed by mining, bears typically graze on forbs, grasses, sedges and rushes. In contrast, during early spring and late fall bears move primarily off the mines where they dig for roots of *Hedysarum* sp. Late summer is the season when bears consume berries, exclusively outside mines.

A large proportion of bear diet on and around reclaimed mines in our study area is composed of ungulates. We found that elk and moose were the primary prey outside mines, with deer the predominant ungulate consumed on mines. Bear consumption of ungulates peaks during calving/fawning season, with a secondary peak in the fall. The reclaimed mines provide sources of ungulates, particularly elk, which are taken by bears on and off mine leases.

Bears cross the 24-km Cheviot active mine haul road, and although some of the published literature suggests that bears in industrially active landscapes become more nocturnal, in our study bears were generally active primarily in the morning and evening, remaining active throughout the day, but were least active at night. Also, although overall bears spent disproportionately more time far away from active mining, some bears sometimes moved close to Cheviot mine where blasting, shovelling, loading and transportation of coal with heavy haulers occurred.

During our monitoring we observed males, single females and females with cubs using the reclaimed mines and neighbouring areas. This might be explained by the great abundance of forage as well as security; that is, the open grasslands on reclaimed mines allowing detection of threats from greater distances. Memory and learning play important roles in an animal's life history, and bear cubs, particularly females, will likely use the same areas as their mothers used through adulthood.

We caution that land-use planning within grizzly bear range during active mining, and following mine closure, needs to incorporate the reality of a landscape with bears of all age and sex classes. Some bears may have become accustomed to human activity during active mining operations. Once human presence on the mined landscape becomes less predictable, such as through recreational activities, the behaviour of bears may or may not switch to more fear of people. One of the cautionary approaches to prevent human-bear conflicts on mine leases would be to continue the enforcement of speed limits on coal haul roads. This is especially true in areas with high frequency of wildlife crossings, restricting access on reclaimed mines to designated trails, and proper waste management practices.

Home ranges of bears that overlapped mine leases also included vast areas of largely pristine habitats such as Whitehorse Wildland Park and Jasper National Park and other public lands where there is no mining. Wild areas are key strongholds providing essential bear foods during early spring, late summer and fall. They also act as sources of native plants and animals that in the long-term may colonize reclaimed mines contributing to ecological restoration.



Grizzly bear grazing on Gregg River reclaimed mine near Cadomin. Photo Credit: Beth MacCallum, P.Biol.

Bio: Bogdan Cristescu is a Ph.D. Candidate in Biological Sciences (Ecology) at the University of Alberta and 2010 recipient of the Alberta Society of Professional Biologists' Graduate Scholarship. Mark Boyce is a Professor of Biological Sciences at the University of Alberta and Alberta Conservation Association Chair in Fisheries and Wildlife. Correspondence can be sent to [cristesc@ualberta.ca](mailto:cristesc@ualberta.ca).



## ASPB Announcements

### 2012 ASPB Conference Planning

Planning for the 2012 ASPB Conference is now underway and volunteers are needed for this year's Committee. The ASPB is looking for enthusiastic, resourceful, committed members to join and contribute as volunteers for another successful, well-attended ASPB Conference. There are many subcommittees, from sponsorship and marketing, to event planning, that you can be involved in. Time commitment between the subcommittees varies so you can pick and choose based on your interest and your schedule. This is a great opportunity to get involved in the ASPB, and the time you volunteer can be used towards your continuing competency points required to maintain your membership as an ASPB member.

If you are interested and want to become involved, or have any questions, please email this year's Conference Committee Co-Chairs for more information:

Elise Savard, BIT ([elise.savard@stantec.com](mailto:elise.savard@stantec.com)) & Alison Beal, BIT ([alison.beal@stantec.com](mailto:alison.beal@stantec.com)).

### ASPB Photo and Specimen Submission Request

The ASPB Communications Committee invites members to submit photos and specimens for use by the ASPB for the purposes of enhancing and updating our display, brochure and website. Consent waivers will need to be completed upon submission and details will be provided to contributors.

Photo submissions: Please email photos in tiff format to [pbio1@aspb.ab.ca](mailto:pbio1@aspb.ab.ca) with "ASPB photos for submission" in the Subject line. Individual photos should not exceed 3 MB.

Specimen submissions: Please email [pbio1@aspb.ab.ca](mailto:pbio1@aspb.ab.ca) with "ASPB specimen submission" in the subject line if you wish to supply specimens for the ASPB display. Arrangements will be clarified for the best method for ASPB to acquire the material.

### ASPB Introduces a Paperless Option: ASPB Membership Renewal Notice has a New Toggle!

In December, you will receive a friendly email reminder regarding your membership renewal with the ASPB. As in the past, renewals are completed online, and this process has reduced the amount of paper used by the ASPB. New to membership renewals will be a toggle that will give you a choice of whether you would like to continue to receive BIOS publications as a hardcopy (current default with membership), or whether you would prefer to have only a digital version emailed to you. The pros of the digital version include the following: a digital version is easy to forward to friends and colleagues; no paper or ink is used to create the digital version (this saves the ASPB money on printing costs); and a digital version can still be printed, if desired. A key pro of the published paper copy is that it looks very professional, and once read, it can be posted or displayed at your office or other bulletin board and used as advertising for the ASPB. Don't worry if you select an option at the time of renewal and then change your mind later. You will be able to access the toggle in your personal profile at any time.

If you have other green initiatives you would like to share, please email them to the BIOS editor, Linda Zimmerling, at [lindazim@shaw.ca](mailto:lindazim@shaw.ca).

## ASPB Upcoming Events

### Alberta Society of Professional Biologists Tour of Glenbow Ranch Provincial Park

**October 15, 2011** at 1:00 pm with an approximate duration of 2.5 hours

Program Fee: Donation

This guided tour will provide you with a chance to view the beautiful Glenbow Ranch and its diverse array of historical and natural resources. Yodel Loop has a little of everything. The unique geology of the Bow River Valley and a pristine environment has allowed the Ranch to become a sanctuary to animals of all kinds. The Tour will also cover the short, but colourful, history of the area and the many pioneer men and women that called this place home.

TO PARTICIPATE, you must pre-register. You need a GRPF Account Number to register.

If you do not have a GRPF Account Number, please call 403-398-3763 (outside Calgary area call toll free 1-800-447-1833) or email [experienceglenbow@grp.ca](mailto:experienceglenbow@grp.ca), and leave your full name, address, phone number, email, and the program number (111015PRGWY).

OCTOBER 2011

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## Links Shared by Members

**The Foothills Restoration Forum's 5th Annual Fall Information Session** will be held on **Thursday, October 6th, 2011** at The Cowley Hall, Village of Cowley, Alberta.

The Theme for this year's Fall Forum is: "Developing practical solutions to reduce industrial disturbance in native grasslands" Incorporating local knowledge of the climate and landscape, with new technology, innovative construction and reclamation techniques to reduce industrial footprint.

For more information, visit our website at [www.foothillsrestorationforum.com](http://www.foothillsrestorationforum.com).

### Water Crossing – CAPF/CAPFT Fall Workshop, Oct. 13 & 14, 2011 in Grande Prairie, AB

This year's session will be focused around water and stream crossing management and will utilize the expertise and course design provided by the Woodland Operations Learning Foundation (WOLF). The course is designed to assist resource managers in understanding, assessing and managing creek crossings for all types of linear land use activity.

Course content can be reviewed on the WOLF website at <https://www.w-o-l-f.ca/>

For more information contact Noel St Jean RPF, CAPF Program Chair, at 780-464-3295 or 780-499-0498 (cell)

# BIOS

Alberta Society of Professional Biologists • Winter 2011/2012

Volume 26 • Number 3

## A Message From Your President

By Charles Macmichael, P.Biol.

Happy New Year to one and all! The coming of a new year brings a time to reflect on last year's events while planning for the year ahead.

Looking back on 2011, I was honoured to step into the role of President after the successful term of Laurie Hamilton. I am thrilled to know that things will be in the talented hands of Susan Patey LeDrew in the spring of 2012. I encourage all members of the society to consider getting involved in the organization in 2012: as a member of any one of our committees; or as a member of the Board of Directors. Those of you who are interested, and I hope there will be many of you, please contact our Executive Director, Ross Bradford, for information and details of the responsibilities, duties and activities for each of these roles.

Since the last issue of BIOS, the Board of Directors and the various committees of ASPB have been busy working with the staff to finalize the strategic plan. This entails developing the required process documents for continued management of the society, its members and the governance of the profession within Alberta. The Board has taken into consideration the feedback from the membership, and has worked to offer a more balanced budget for 2012. The Board has begun to put plans in place to ensure that we continue on this path. As suggested above, if you are interested in this process and its documentation, I encourage you to contact the ASPB and any of its committee chairs through our updated website (it looks great!).

The society is growing continuously, and in December of 2011 was 1038 members, up from 980 members a year ago. I know our membership will continue to expand as the importance of the practice of biology increases, and the accountability and regulation of the profession continues to gain recognition within Alberta. This is in no small part due to the excellent work of our members. As the recognition of the profession grows, so do the requirements of the society to develop larger and more effective infrastructure to serve, to promote and to manage the profession and its members.

Again I encourage all members to take an interest in this process, and put themselves forward to volunteer to assist in development and execution of the Society's responsibilities. The ASPB is at an important stage in its growth, and we need to continue to look

...continued on Page 2

## ASPB 2012 Conference

EXPLORING THE BOREAL FOREST: OIL SANDS IN ALBERTA  
www.aspb.ab.ca ASPB 2012 conference and tradeshow



More information on page 3 as well as at  
[www.aspb.ab.ca/events/2012-aspb-conference](http://www.aspb.ab.ca/events/2012-aspb-conference)

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BIOS is published for the enjoyment and benefit of the members of the Alberta Society of Professional Biologists, and for those interested in the field of professional biology. Articles or comments are welcomed and should be sent to the editor, Linda Zimmerling at lindazim@shaw.ca.

## President's Message Continued

for ways to best manage this process with revenue generation, cost management, volunteer involvement, recruitment of new members and coordination.

As one of only two regulated biology professions in Canada, this is the time for all ASPB licensed biologists to remind government, industry, and the public, of the professional designation, its merits and benefits. We must remind these agencies, and other professional regulatory organizations, that the ASPB promotes the highest standards in the practice of biology to serve the public, and to increase awareness of the importance of sound biological stewardship. It is critical that it be known within Alberta that having a P. Biol. complete the work means that work is done by someone who has been recognized by the Alberta Government through POARA, and other professional regulated organizations, as competent, and who is accountable to standards of professional practice.

The increasing demands of the marketplace on the environment have resulted in new and restructured university programs. Because of this, the increased offerings of other certificate training programs are not always aligned with more traditional disciplines or degree programs. The ASPB is continuing to develop our relationships with educational institutions of Alberta to ensure that students and faculty understand how best to structure their degree programs to meet the qualifications of a professional biologist.

The ASPB continues to advocate for and on behalf of the professional biologist, to respond to government legislation, policy initiatives and professional equity. The ASPB recognizes the achievements of biology professionals through awards, publications and presentations. Through professional development opportunities, communication, and networking between professional biologists, the benefits of membership will continue to grow in 2012.

There are indications that the demand for professional biologists will continue to increase in 2012 and beyond. The ASPB and its members are well positioned to contribute to this process and benefit from it. I encourage you, the ASPB member, to raise the profile of your profession through discussion, high quality research and publishing, exhibiting your Certificate of Membership, participation in student development activities, and any other means at your disposal. By describing yourself as "Professional Biologist" you are promoting awareness of the designation, the organization and the profession.

The marketplace also encourages the other regulated professions to find a greater role to meet the expanding demands of industrial development and regulation. Our representation on the Joint Environmental Professional Practice Board (JEPP) provides the ASPB with a voice and a connection to the other professional regulatory organizations (PROs). Beyond this, the ASPB continues to develop its relationship with the College of Applied Biology and the Association of Professional Biologists in British Columbia. Several initiatives will be taking shape in 2012 to continue these relationships.

As the ASPB prepares for its annual conference and AGM in April 2012 (see the conference information in this newsletter) I am encouraged by the momentum that continues to build with this organization. I look forward to 2012, and hope to see you all at the conference and the AGM in April.

Sincerely,

Charles Macmichael



# ASPB 2012 Conference and Tradeshow

## CALL FOR PAPERS AND POSTERS

The Alberta Society of Professional Biologists' (ASPB) 2012 conference titled "Exploring the Boreal Forest: Oil Sands in Alberta" will be held at the Hyatt Regency Hotel, Calgary, Alberta, on April 18 and 19, 2012. The nature of industrial development and land use management in the oil sands region of Alberta has sparked increased attention recently, and presents challenges and opportunities for biologists.

The focus of the conference is on issues relevant to the oil sands region that may be occurring in other parts of the boreal forest across Alberta or elsewhere in Canada. ASPB invites submissions for presentations describing recent challenges and new approaches to dealing with, and managing, the biological resources in the oil sands and/or boreal region. Submissions may be examples from Alberta or elsewhere (please demonstrate application to Alberta's boreal and/or oil sands region).

There have been several new legislative developments and scientific advancements since the ASPB last held an oil sands-centric conference. This conference will provide attendees (both ASPB members and non-members) interested or directly involved in oil sands development and land use management with a forum to discuss current issues and challenges in this region of Alberta's northern boreal forest. Share your successes and challenges, facilitate new ideas, contribute to the discussion and debate the issues! Contributions could focus on the following:

- Current Legislation, Regulations, and Regional Planning;
- Reclamation and Closure Planning;
- Wetlands and Water Usage;
- Species at Risk and Rare Species;
- Ecological Restoration in the Oil Sands;
- Environmental Impacts & Risk Management (including Cumulative Effects and Integrated Access and Footprint Management); or
- Mitigation and Monitoring Programs;
- Oil Sands and Aboriginal Communities.

The 2012 ASPB Conference Committee welcomes presentation abstract submissions for review. Target audiences include representatives from industry, consulting, government, environmental advocacy groups, and academia. Topics are not restricted specifically to oil sands-related work, but should be relevant to the management challenges and environmental issues in the oil sands region of Alberta's northern boreal forest. Papers will be peer-reviewed. Acceptance of the contributions will be based on originality of the work, relevance to the conference topic and the practice of biology, and overall submission quality.

An abstract must follow the format outlined on the ASPB website and be submitted electronically to [pbioi@aspb.ab.ca](mailto:pbioi@aspb.ab.ca) by **January 20, 2012** for review. Please reference the ASPB 2012 Conference in the subject line. Within the abstract, please explain how the proposed presentation will complement the conference topic. If you do not receive email confirmation that your submission was received within five business days, please contact the ASPB directly at (780) 434-5765. Please note that the cost of preparing the proposal and attending the conference will be at the applicant's expense (including speaker discounted conference registration).

In addition, the 2012 ASPB Conference Committee is planning a panel session and would like to solicit topics for discussion. Please send your ideas to [pbioi@aspb.ab.ca](mailto:pbioi@aspb.ab.ca) by **January 20, 2012** for review.

## Abstract Format

For Abstract format specifications please visit [www.aspb.ab.ca/events/2012-aspb-conference](http://www.aspb.ab.ca/events/2012-aspb-conference)

## Sponsorship Opportunities

Animal and Plant Friends Fund Sponsors	Sponsorship amount	Benefits <sup>1,2</sup>
Sandhill Crane	\$10,000	Corporate logo on program and signage displayed throughout conference, one free tradeshow table, plus eight free registrations
Woodland Caribou	\$5,000	Corporate logo on program and signage displayed throughout conference, one free tradeshow table, plus four free registrations
Stemless Lady's Slipper	\$3,000	Corporate logo on program and signage displayed throughout conference plus two free registrations
Arctic Grayling	\$1,500	Corporate logo on program and signage displayed throughout conference plus one free registration
Wild Rose	\$300 to \$500	Recognition in program
Supporting Sponsor	\$1,000	Recognition in program, one free registration
<b>Event Sponsors</b>		
Banquet (5 sponsors)	\$2,000 each	Corporate logo on program and entry placards, verbal recognition at the start of banquet
Name tags (1 sponsor)	\$2,000	Corporate logo on name tags
Speaker (Banquet) 1 sponsor	\$1,000	Corporate logo on program and entry placards, verbal recognition when the speaker is introduced
Lunch (2 sponsors)	\$1,000 each	Corporate logo on program and entry placards, verbal recognition at the lunch break
Coffee breaks (4 sponsors)	\$500 each	Corporate logo on program and entry placards, verbal recognition at the coffee break
AGM (1 sponsor)	\$2000	Recognition at AGM

## Student Sponsor:

Any unused Fund Sponsor Registration or Banquet tickets can be donated to assist students to attend the event. These sponsors will receive special recognition at the conference, and will be recognized by corporate logo on adposted at the respective universities.

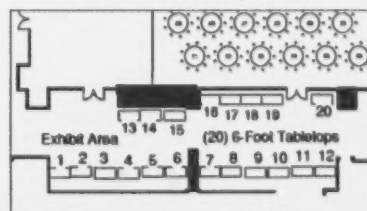
<sup>1,2</sup> For specifications and conditions of sponsorship, please visit the conference website.

Contact P. Ross Bradford, ASPB Executive Director at [ExecutiveDirector@aspb.ab.ca](mailto:ExecutiveDirector@aspb.ab.ca) 780-469-6196 with sponsorship inquiries.

## Tradeshow Opportunities

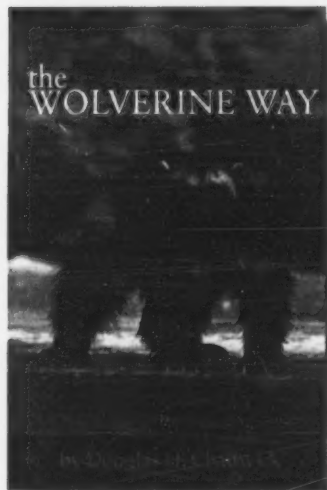
Costs of exhibit tables are \$500. Tables are booked on a first-come, first-served, basis (only 20 available). To book a table, send an e-mail to [pbioi@aspb.ab.ca](mailto:pbioi@aspb.ab.ca) and include 'Tradeshow Inquiry' in the subject line.

Tradeshow tables 1-20 set-up schematic



## Book Review: The Wolverine Way by Douglas H. Chadwick

By Angela Bowditch, P.Biol.



The Glacier Wolverine Project was a 5 year study done in Glacier National Park involving capture, marking and tracking to gain insight into the enigmatic wolverine *Gulo gulo*. The wolverine is a species in trouble with little confirmed information. Jeff Copeland and Rick Yates ran the project to fill in the blanks for many unanswered questions about the biology and natural history of the wolverine. Douglas H. Chadwick was originally involved in the project to do research for an article, but was fascinated by these animals and stayed as a volunteer.

Wolverines can be very elusive and cover a huge territory relative to their size, which makes studying them very challenging. Chadwick shares anecdotes and facts, both amusing and touching, that were learned through the study that make it an interesting read for both the lay-person and the biologist. Wolverines have a reputation for ferocity and at a diminutive 18 kg (40 lbs) in size, have been known to scare a grizzly bear off of a kill site. During the study male wolverines were observed travelling with juvenile offspring, a behaviour virtually unheard of in the animal kingdom. Chadwick recounts the difficulty of keeping these determined animals in the trap long enough to handle them. One male chewed his way out of a log trap only to travel to the next trap and chew his girlfriend out of her trap.

Chadwick is a master storyteller and does an amazing job of weaving in an important conservation message into the fascinating story of the wolverine: "To make a point about their present status [in the United States], you could cram all of them into one person's mountainside trophy home. It would be a snarlfest, but they'd fit" (pg. 23). Glacier National Park is expected to have no glaciers by the year 2020. Chadwick compares wolverines to the polar bear as a gauge of climate change: "Yet until scientists started to focus on climate change, no one gave much thought to how creatures with built-in snowshoes, a super-cozy furcoat, smoldering metabolism, and food cached in nature's refrigerators are supposed to handle swimsuit weather in our ever-toastier Age of Industrial Exhaust" (pg. 61). Chadwick discusses the threats to wolverines: habitat fragmentation, roads, hunting and trapping pressures and touts projects such as the Yellowstone to Yukon Conservation Initiative (Y2Y) and Freedom to Roam Campaign that strives to create a wildlife corridor through Canada and the United States.

## ASPB Christmas Social

ASPB's Christmas Social at the Big Rock Brewery was organized by the Calgary Professional Development Committee.

Twenty six members and non-members came out for the ASPB's annual Christmas Social and were treated to some great pizza and local beer to wash it down. After eating and sampling the fine brews, the group toured the Big Rock facility and witnessed how the beers are made including their signature brands.

### Facts:

- Big Rock-Friendly Pubs around Alberta are frequently testing new varieties of beers. Once a positive threshold is achieved it becomes a bottled variety and is then sold to Liquor stores (the latest, a Rye and Ginger Ale Beer, was a hit during the tour).
- Calgary's hard-water is one of Big Rock's key secret ingredients for producing a great beer (go figure!)
- The Big Rock "cans" you see in farmers' fields signify these as suppliers of malting grains to Big Rock (yes another ingredient)



Jan Simonson and Karoliina Munter choose their 6 favourite varieties of beer.



Charles (current President) and Susan (incoming President) joke around at the Big Rock Brewery

Photo credits: Stacey Schaub-Szabo, P.Biol.

We enjoyed this visit so much we will be organizing another "beverage" tour somewhere in March.

## Peggy Thompson 2011 Award Winners

In the category of a biological technical report:

**Judy Bennett, P.Biol. and Dave Reid, P.Biol.**

Contributors to:

Oldman Watershed Council. 2010. Oldman River State of the Watershed Report 2010. Oldman Watershed Council, Lethbridge, Alberta. 284 pp.

In the category of a scientific publication undergoing professional review:

**Allan H. Legge, P.Biol.**

Legge, Allan H. (Ed.) 2009. Air Quality and Ecological Impacts: Relating Sources to Effects. Developments in Environmental Science, Volume 9. (Series Editor: S.V. Krupa). Elsevier Ltd. 312 pp.

## ASPB 2011 Graduate Student Endowment Scholarship Recipients

University of Alberta - Jason Gardiner



Thesis topic: "The identification of new gene expression profiles associated with early stages of vein formation". My work will contribute to the characterization of families of plant transcription factors for which very little is known. Further, my study will advance our knowledge of the molecular events underlying leaf vascular strand formation.

University of Calgary - Susanne Golby



Thesis topic: "Multispecies biofilms from an oil sands tailings pond". The objective of my research was to study the indigenous microorganisms of the Alberta oil sands tailings ponds, and to find ways in which they can be used as bioremediation tools to detoxify tailings water. I focused particularly on metal resistance of the microorganisms as metals are inhibitory to organic biodegradation. There is a collaborative research effort between the Universities of Calgary and Alberta to apply wastewater bioreactor technology to

treat tailings effluents. Our collaborators at the U of A are Drs Yang Liu and Tong Tu from the Engineering Faculty.

University of Lethbridge - Chad Laing



Thesis topic: "Whole genome sequences of *E. coli* O157:H7". I am examining whole genome sequences of *E. coli* O157:H7 and determining the regions of the genome that are most variable between strains. These regions will then be used for molecular fingerprinting and characterization of this important human pathogen.

## Edmonton Regional Science Fair 2011 ASPB Award Recipients

By Michele Moscicki

On behalf of the entire Edmonton Regional Science Fair council we thank you for your support of youth in science! We are also pleased to announce that the team of 8 students from Edmonton that competed at the Canada Wide Science Fair in Toronto did very well! Each student came home with a medal and two students from Edmonton took home the top honour winning the Best in Fair award out of 509 students competing from across the country. This would not be possible without organizations such as yours that sponsor our regional fair.



"Hatching Eggs" Honourable Mention: Teron Calihoo  
Photo Credit: Lorie Taylor Leech



"Mold On Food" First Prize: Alexandra Kopf and John Whitehead  
Photo Credit: Lorie Taylor Leech

Robin Leech, P.Biol. (ASPB past Executive Director) presented the winners with their awards.

## Calgary Youth Science Fair 2011 ASPB Award Recipient



Gerry Ward presents the ASPB Award to Sarah Hyslop for her project: Biofilm Eradication: A Novel Approach. Photo used with permission CYSF.

**The CYSF will have its 50th Anniversary in 2012! Become a judge and be part of the celebration! Visit [www.cysf.org](http://www.cysf.org) for details.**



## Interview with a Biologist: David Trew, P.Biol.

By Ngaio Hotte, P.Biol.



What do bagpipes, dahlias, and water quality have in common? No, this is not a biology riddle. They are all interests that captivate this issue's Featured Biologist, David Trew.

As Executive Director of the North Saskatchewan Watershed Alliance (NSWA), David coordinates the interests of over 130 members representing industry, government, non-government organizations, and the public, who are working together to protect and enhance water quality in the North Saskatchewan River basin. The NSWA is one of eleven Watershed Planning Advisory Councils (WPACs) established under the provincial *Water for Life* Strategy. At the beginning of this year, the NSWA released a Discussion Paper for its Integrated Watershed Management Plan for the basin. The document shaped discussion between communities and policy-makers about the future of the North Saskatchewan River Watershed, and will form the basis for the NSWA's plan for the region, forthcoming in 2012.

It's no accident that David was chosen to lead the organization. A long-time resident and provincial biologist, David contributed to the evolution of watershed-level management science in Alberta and has earned his respected role in the NSWA.

David studied zoology at the University of Guelph, and during summers was hired on by the Ontario Department of Lands and Forests, Fish and Wildlife Division, to conduct research for the Canada Land Inventory. He fondly recalls, "I spent the field season immersed in field limnology, conducting bathymetry, testing water chemistry samples, test-netting fish, and mapping spawning beds in northern Ontario."

After graduation, a close connection to his family roots prompted David to leave Canada for Britain. His travels took him to Scotland, where he landed a research position at the University of Strathclyde, studying the ecology of West Scottish Sea Lochs. Based out of the town of Oban, the position offered an opportunity to sail up and down the Scottish coast, measuring phytoplankton primary production.

When he returned to Canada in 1974, David headed to Alberta, where he was offered a job as an assistant to Dr Martin Paetz, the Chief Fishery Biologist with the Fisheries Branch of Alberta Department of Lands and Forests. "The field of fisheries biology was strongly emerging in Alberta, and my supervisor was one of the first experts in the province," he recounts. It was a tremendous opportunity to travel throughout the province, supporting the rapidly-emerging fisheries program and working with other regional biologists.

In 1976, David made a move to Alberta Environment, where he worked in the Pollution Control Division. At the time, the quality of Alberta's lakes was perceived to be declining, and the provincial government was scrambling to establish methods of assessment and develop predictive models to manage impacts. Applied limnology was still emerging, both in Canada and internationally, and David's project team developed field and lab assessment methods that influenced the practice of limnology in Alberta.

His first major study was at Baptiste Lake, where shoreline and watershed development were degrading water quality, and much controversy existed. "We developed the first measured watershed and lake nutrient budget in Alberta and investigated the effects of land use on runoff and surface water quality," says David. "We collected and compared water quality data for forested and agricultural tributaries entering the lake, and documented the first evidence of internal phosphorus loading from bottom sediments."

Using the knowledge and sampling methodology they developed at Baptiste Lake, David and his colleagues went on to survey hundreds of lakes over the next fifteen years, laying the groundwork for phytoplankton identification, nutrient measurement and examining the impacts of anthropogenic development on lake water quality.

By the mid-1980s, David was managing his own crew of seven limnologists, who were collectively responsible for evaluating and providing water quality management advice for each of the major river basins in Alberta. His group worked with regulators to reduce phosphorus loading in the Bow and Oldman Rivers from wastewater treatment facilities in Calgary and Lethbridge, respectively. They also conducted watershed studies at Wabamun Lake, Pine Lake, Lake Isle, lakes in the Cold Lake-Beaver River area, and other sites, and investigated the effects of algal blooms on cyanotoxicity at Lac Ste Anne and Lac la Nonne. By conducting river basin assessments, establishing a long-term river monitoring program, and helping to develop nutrient management plans, David and his team paved the way for significant water quality improvements in the rivers of central Alberta.

During the 1990s, David and his colleagues began to investigate water quality impacts of agriculture, pulp mills, and oil sands development. He coordinated efforts with the provincial and federal agricultural departments and industry members through the Canada - Alberta Environmentally Sustainable Agriculture (CAESA). CAESA's work provided the first empirical evidence of the impact of agriculture on runoff and water quality in Alberta. He also participated in the Northern Rivers Ecosystem Initiative, helped to develop the acid deposition management framework for lakes, and investigate the impacts of new reservoir construction on water quality.

David applauds the provincial government's transition from managing water quality to integrated water and land management, through implementation of *Water for Life*, as a step in the right direction. "I was always concerned that there was a lack of policy for watersheds. I have spent my career trying to promote the integration of land management policies and planning for water. Historically, [the province has] been good at managing point sources, such as wastewater, and issuing licences for water withdrawals, but holistic management to incorporate non-point sources is just now emerging." "When *Water for Life* was rolled out in 2003-04, there was a specific commitment to watershed planning," he says.

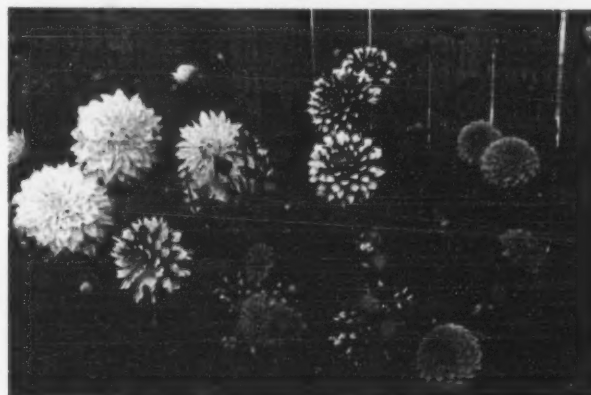
The challenge of implementing water quality monitoring and developing baselines has been compounded by a historical shortage of funding. "The other challenge, as with other resource managers, is the funding issue," he explains. "Modest budgets have been provided for water quality monitoring in Alberta. The panels for monitoring on the Athabasca have just been developed in the past few years. Sometimes it takes a solid piece of research or a calamity to wake people up. I hope that in the future our society will see the importance of comprehensive, basin-scale water quality management as well as the research and monitoring components."

The renewed wave of interest in environmental management demonstrated by a younger generation offers David some encouragement. "I graduated high school in 1966," he reflects. "And I was the only person who went into environmental work. It was just not on the radar." In recent years, David says he has witnessed environmental education brought into the elementary school curriculum, and seen the quality of education improve dramatically. "As a result, industry is now more environmentally conscious. In my work at the WPAC, I talk to a large number of organizations. There is huge interest in seeing water and watersheds properly managed." David traces his own connection with the environmental issues back to his boyhood pursuits of fishing, hunting, scouting, and camping. "Raised in Port Hope, [Ontario,] I grew up on the Ganaraska River, fishing or swimming," he recalls. "You get imprinted as a youngster with things that interest you." When he began his studies at the University of Guelph, David intended to focus on fisheries biology, but his interest later broadened to limnology.

But David is more than just a fish guy; he also leads a bagpipe band, enjoys antiques and art, and cultivates a vibrant garden. In the summertime, David's band tours North America and Scotland and he plays solo gigs for highland dancing. "Music is a really big part of my life," he notes. "At the end of the day, I assume a different identity." His appreciation for music and art has drawn him to travel throughout Europe. "I pursue art in different ways," David explains. "I collect art, and I love to travel and see different countries."

David's career may have evolved away from field work toward a focus on water resources planning and policy development, but he still enjoys time outdoors. "My main interaction with Mother Nature now is gardening," David says. Over the last five years, he has focused on one flower in particular. "This year, I had the most beautiful multi-coloured Dahlias," he says proudly. "These flowers are just incredible." In fact, the flowers he grows are so impressive that this year, David and a friend have decided to create a calendar: "Dave's Dahlias," he laughs.

David's balanced appreciation of art and science may be exactly what makes him so skilled at his job. "I know other people who have



Dave's Dahlias. Photo credit: Dave Trew, P.Biol.

been trained in the sciences who use art as a counterbalance," he reflects. "There are two very different types of people that I interact with." In his role, managing various interests integrating land and water management, David's ability to operate in different spheres strengthens his understanding of opposing interests and helps him to generate new solutions to challenges.

Reflecting on the developments he has witnessed during his career, David is optimistic about the future. "There has been a tremendous water science foundation laid around the world since the Second World War," he explains. "Pollution was most acute in Canada in the 1950s. Since then, there has been steady progress uphill. We have a strong foundation in science and technology, there is much more awareness about environmental management, and there is demand for it. Governments are finally getting a clear vision on the need to manage river basins holistically."

David sees the steady rate of progress on environmental issues and the vast improvement in the health of rivers in central Alberta as indicators that progress is moving in the right direction. "There is good, clear evidence of technology and how it has improved the health of rivers," he points out. "I would like to see [technology] applied more to tributaries and lakes. These are not yet managed as well as rivers. But I'm optimistic because of public pressure and government recognition of the need for improvement."

David warns a younger generation of biologists of the need for long-term perseverance and patience as they work to protect, conserve, and manage environmental quality. "Dedicate yourself," he instructs. "Because you're probably in for the long haul. Environmental change doesn't happen overnight. Whether you work in government, industry or academia, it requires a longer term commitment. The management of these systems is complex and requires longer-term dedication."

The rewarding part, he says, is that the work is incredibly interesting. "We're quite fortunate as individuals. Many people in other fields get bored or burn out. I know many biologists, now in their mid-60's, who are still interested and passionate about their work. I love coming to work each day. I love the job and the challenge, and I feel very fortunate."

## Professional Liability Insurance

As a benefit of membership, ASPB has arranged with HUB International Insurance to provide special group corporate insurance rates. HUB International Insurance publishes insurance InFacts periodically, which include helpful insurance tips, such as the following:

**Basic Insurance is all I need . . . or is it?**

While you may see value in having insurance for your tools and equipment, and even liability coverage in the event of an injury or property damage, you may not be covered for incidents that occur as a result of your work. Below are examples of recent claims in the biology and environmental industry:

- **Inaccurate Reporting:** An insured was retained to conduct an ecological and environmental impact study on a new development. The insured failed to accurately report how to protect an ecosystem on the property. The claimant alleged negligence in the clearing of trees on the property as a result of the inaccurate report.
- **Incomplete Testing:** An insured was retained to test groundwater samples. The claimant alleged that the insured's testing procedures were incomplete and inaccurate, and that the insured failed to verify the test results.
- **Failure to Inform:** An insured failed to advise their client of all relevant standards and regulations relating to the management of renewable resources.
- **Wrong Information:** An insured provided inaccurate recommendations in the conducting of an experiment in plant growth.

The above claims are simple omissions that resulted in large payouts. While you or your staff may not have made these or other costly errors in the past, a simple miscommunication could cost you more than your reputation. With Professional Liability insurance, you will be covered for your errors or omissions, as well as legal costs incurred. This valuable program has been developed for your association by Hub International Insurance Brokers in conjunction with ENCON Group Inc., one of Canada's leading professional liability underwriters. Together we also provide integrated claim management and loss prevention services for your association.

For more information about the Professional Liability insurance program that has been arranged by your Society, please obtain an information package from your Society website or contact:

**Jordan Fellner**  
Account Manager  
Hub International Insurance Brokers

Phone: 604-899-3939  
Toll Free: 1-800-606-9969  
Fax: 604-293-1493  
Email: [jordan.fellner@hubinternational.com](mailto:jordan.fellner@hubinternational.com)

HUB International | HUBTOS

3675 Henning Drive, Burnaby, BC V5C 6N5  
[www.hubtoss.com](http://www.hubtoss.com)



## Articles Worth Sharing

Carbyn, L., R. Leech, and G. Ash. 2011. The evolution of biological societies in Alberta. *Canadian Field-Naturalist* 124(4): 321-329.

The article by Lu Carbyn, Robin Leech, and Gary Ash was published in *The Canadian Field-Naturalist*, Fall 2011. As Alberta biologists, you are likely familiar with our journal, but you may not be aware of the major changes we've made to our journal over the past year. These include:

- Creating a website for our journal that includes all content going back to 2003 (<http://www.canadianfieldnaturalist.ca/index.php/cfn>)
- Making issues more than five years old available for free online via the Biodiversity Heritage Library (access the link through our journal's Archives page).
- Catching up our publication schedule by publishing two years' worth of issues in the past year, thanks in large part to the efforts of outgoing Editor-in-Chief, Dr Francis Cook.

I hope you will visit our website to read our published research, consider subscribing to the online or print versions of our journal, and consider submitting your own articles, notes, and book reviews to us in the future.

Sincerely,  
Dr Carolyn Callaghan, Editor-in-Chief of *The Canadian Field-Naturalist*  
[editor@canadianfieldnaturalist.ca](mailto:editor@canadianfieldnaturalist.ca)

Check out the ASPB January 2012 Bulletin for the link to view the article.

## ASPB Introduces Paperless Option

**ASPB Introduces a Paperless Option: ASPB Membership Renewal Notice has a New Toggle!**

By now you have received a friendly email reminder regarding your membership renewal with the ASPB. As in the past, renewals are completed online, and this process has reduced the amount of paper used by the ASPB. New to membership renewals is a toggle that will give you a choice of whether you would like to continue to receive BIOS publications as a hardcopy (current default with membership), or whether you would prefer to have only a digital version emailed to you. The pros of the digital version include the following: a digital version is easy to forward to friends and colleagues; no paper or ink is used to create the digital version (this saves the ASPB money on printing costs); and a digital version can still be printed, if desired. A key pro of the published paper copy is that it looks very professional, and once read, it can be posted or displayed at your office or other bulletin board and used as advertising for the ASPB. Don't worry if you select an option at the time of renewal and then change your mind later. You will be able to access the toggle in your personal profile at any time.

If you have other green initiatives, or any articles you would like to share, please email them to the BIOS editor, Linda Zimmerling, at [lindazim@shaw.ca](mailto:lindazim@shaw.ca).